



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,067	05/22/2006	Kazuyuki Akagawa	1794-0166PUS1	8901
2292 7590 08/13/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER KING, JOSHUA	
			ART UNIT 2828	PAPER NUMBER
			NOTIFICATION DATE 08/13/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/538,067

Applicant(s)

AKAGAWA ET AL.

Examiner

Joshua J. King

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 2-4, 6, 8-10 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 7, 11 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06/09/2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date See Continuation Sheet
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :06/09/2005, 05/25/2006, 07/24/2006.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species 4 (claims 5 and 11) in the reply filed on July 30, 2007 is acknowledged. The traversal is on the ground(s) that a) there is no undue burden on the examiner and b) that at least generic claims 1, 7, and 13 should be in condition for allowance. This is not found persuasive because a) in the previous office action the examiner laid out in paragraph 2 why a burden exists on the examiner. The species are directed toward mutually exclusive content please see MPEP 806.04. The second argument is also not persuasive as claims 1, 7, and 13 are not in condition for allowance.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 2-4, 6, 8-10, and 12 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on July 30, 2007.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

4. The information disclosure statements (IDS) submitted on June 09, 2005, May 25, 2006, and July 24, 2006 were filed after the mailing date of the instant application on

Art Unit: 2828

June 09, 2005. The submission is in compliance with the provisions of 37 CFR 1.97.

Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Aab et al. (U.S. Pre-Grant Publication 2002/0141471).

7. Aab et al. discloses:

- **With respect to claim 1**, a laser resonator (Fig. 1) made up of a mirror having predetermined transparency (Fig. 1 element 1) and an adaptive optics (Fig. 1 element 4); a laser medium disposed inside said laser resonator (Fig. 1 element 2); and a dispersion element for receiving an output light from said laser medium (Fig. 1 element 8 or 3).
- **With respect to claim 7**, said adaptive optics is any one of a tracking mirror and a deformable mirror (Fig. 1 element 4).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2828

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 5, 7, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Algots et al. (WO 01/18922 A1) in view of Owa et al. (U.S. Patent Number 6,088,379).

10. Algots et al. discloses:

- **With respect to claims 5 and 11**, a laser medium capable of performing laser oscillation in a predetermined range of a wavelength band (Fig. 2 element 3), which is disposed inside a laser resonator (Fig. 2); a first adaptive optics having a mirror for receiving an output light from said laser medium (Fig. 2 element 34 and tuning mirror); a second adaptive optics having a mirror for receiving a light transmitted by said first adaptive optics (Fig. 2 element grating and 20a) it is extremely well known in the art that a grating can be used as a mirror, for example any VCSEL device uses gratings for mirrors; and a mirror having a predetermined transparency, which is disposed for receiving a light reflected by said mirror of said second adaptive optics (Fig. 2 element 4).
- **With respect to claims 7 and 13**, said adaptive optics is any one of a tracking mirror and a **deformable mirror** (Fig. 2 element tuning mirror and 34 or Grating and 20a).

11. Algots et al. does not disclose:

- **With respect to claim 5**, a birefringent filter for receiving a light reflected by the mirror of said first adaptive optics, and positioned between the first and second adaptive optics.

12. However, Owa et al. discloses:

- **With respect to claim 5**, a birefringent filter placed in an extended cavity (Fig. 1 elements 201, 242, 243). It should be noted the first and second adaptive optics form an extended cavity. As is understood in the art extended cavities are used to turn the cavity of a laser thereby allowing for a longer cavity to be formed without increasing the linear length of the cavity. The advantage is to accurately select the resonant wavelength (column 5 lines 39-41). It should be stated that while the device disclosed by Algots et al. is able to perform a similar function the combination is still obvious. The examiner has provided evidence that the combination is still obvious by showing that accuracy of wavelength selection can be increase by adding additional wavelength selective elements (please see Okazaki U.S. Patent Number 5,494,804 column 5 lines 31-32).

13. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the device disclosed by Algots et al. with the birefringent filter for receiving a light reflected by the mirror of the first adaptive optics as disclosed by Owa et al. in order to accurately select the resonant wavelength.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Okazaki (U.S. Patent Number 5,948,804) discloses adding additional wavelength selective elements to more accurately select the wavelength. Hammons et al. (U.S. Pre-Grant Publication 2001/0010697) discloses a birefringent filter in an extended cavity. Spuehler et al. (U.S. Patent Number 6,778,565) see fig. 10.

Art Unit: 2828

Pang (U.S. Pre-Grant Publication 2002/0136245) please see Fig. 1. Freeman et al.

("Adaptive Laser Resonator") see page 1.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua J. King whose telephone number is 571-270-1441. The examiner can normally be reached on Mon.-Thurs. 10:00-7:30 and every other Fri. 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Sun Harvey can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JJK 08/02/2007

